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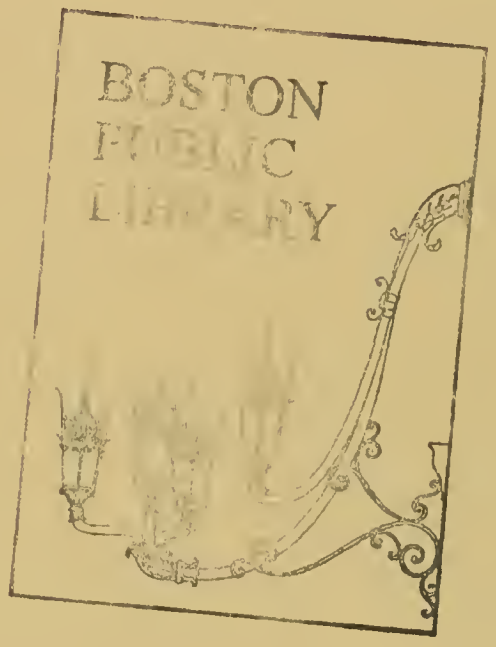

CENTRAL BOSTON

DISTRICT PLAN I

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Div. of Comprehensive Planning
Boston City Planning Board

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A General Plan for Central Boston

Introduction

This paper is intended to be a conceptual framework, leading to formulation of certain guides or goals for the long range use and development of the central area of Boston. This goal statement, along with others that have been or will be made, should be regarded as a guide for the making and periodic updating of The Comprehensive Plan for Boston.

The principals developed herein and applied to the Boston situation will serve as the basis for a series of suggested sketch plans: (a) mass transportation, (b) circulation, (c) land use, (d) public facilities. These sketch plans should be regarded, at this stage, purely as one person's design conception and application of principal, and will inevitably be subject to varieties of interpretation.

The following goal statement applies to (and embodies the concept of) the core city -- central Boston (also called District 1), being approximately that part of the corporate city which people conceive of emotionally as "Boston". Initially it will be concerned with the concept of the regional center, for which no attempt is made to determine percise boundaries.

This statement and general plan proposal will not employ a problem-solving approach, although many basic problems have contributed to its development. It rather aims at an ideal vision of the urban center at some indefinite date in the future, or more properly, directions of growth in time. In no sense does it attempt to deal with effectuation or staging or aspects of a development program. It is tied to no target date, but probably a generalized time dimension of 40 years is a reasonable reference point if one is needed.

This proposal is not intended to duplicate or supercede anything in the recently published CBD report, but on the other hand it cannot omit the CBD area. However, it applies to a much larger territory, in a greater time dimension, and at a higher level of generality. Relationships to other parts of the city and the metropolitan area are also carefully considered.

In formulating a comprehensive goal statement for the central city, a number of abstract qualities might express all of our desiderata at their most generalized level. Such qualities as accessibility, compactness, attractiveness, convenience, flexibility, stability are general specifications that no one will quarrel with,

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1. See also general plan statement by S. F. Hodges, 1959; CBD Report of the BCPB, 1959

but they do not adequately spell out the role that this city is to play nor the form it will assume, nor do they help in the resolution of conflicts between goals.1 Instead it will be attempted to develop some guides for physical development by way of exploring, at an abstract level, the following elements of city planning: function, special organization, size, density, capacity, form, grain, and movement.

A final section will discuss the case for intown residence and summary statement will distill all conclusions as they apply to the study area. (The illustrations referred to in the text have not been reproducted, but can be examined in the original, upon request.)

I. Function

(defined by Webster as "the national, proper, or characteristic action of anything")

Basic Question:

What functions should be located in the regional center?

Approach:

A series of concepts having to do with urban functions will be examined on a purely theoretical basis and later applied to the real situation.

A. The Concept of a regional center?

At the heart of any large metropolitan region is a central city area (larger than the central retail district or central business district) which is the functional center and fountainhead of all activity in its surrounding hinterland. This is primarily an administrative center -- the "brains" of the region. Here ideas are produced and disseminated, person-to-person contacts are made, the arts and sciences practiced, paper shuffled, decisions made, money and goods exchanged, and the highest accomplishments or urban civilization made available. Before defining the central area geographically, its role as the functional center of the region must be examined.

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1. See report on general plan objectives by Gwen Bell.

It is assumed first that the regional center is a functional entity -- an integrated complex of functional complexes which can best be conceived and planned for as organic whole, rather than a collection of differentiated parts.1

B. Core-frame concept:

The regional center of the metropolis consists of a core (roughly the equivalent of the CBD) and a surrounding frame (sometimes called the "frame of the CBD".) (See figure 1)

C. The Core:

The CBD core consists of those central region-serving functions needing high accessibility for people and having high concentration of activity for the exchange of goods, performance of services, and interchange of ideas. It is characterized by intensive land use, tall (elevator) buildings, limited geographic extent which is independent of metropolitan population, concentrated daytime population, convergence of mass transportation, and primarily internal linkages.2 In broad outline, it consists of "office type" functions and "retail-type" functions.3

(1) Office type functions:

(a) administration of government
(b) administration of various private business and non-profit activities
(c) finance, insurance, real estate, and kindred activities
(d) business services such as auditing, advertising, data processing, telecommunications, news syndicates, duplicating, etc.
(e) professional services such as legal, medical, dental, engineering, architectural, research,etc.
(f) wholesale agents and brokers (without stocks)
(g) manufacturers' sales offices
(h) non-store retailers and mail order houses

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1. Although no standard definition exists for the central region, this concept has been used in a number of studies, such as Horwood & Boyce, Studies of the Central Business District and Urban Freeway Development, U of Washington, 1959; and in planning reports for Philadelphia, Cleveland, Chicago, Detroit, and other cities.

2. Ibid, p. 16

3. See Shirley F. Weiss, The Central Business District in Transition, U of North Carolina, 1957, p. 25

(2) Retail-type functions:

(a) central retail business
(b) personal consumer services
(c) amusement, recreation, assembly
(d) hotels, motels, lodging houses
(e) gasoline service, automotive sales & services

(3) Many functions classified in the frame.

D. The Frame

The CBD frame consists of those region-serving and related functions needing locations close to the core functions and to the special transport and terminal facilities found there, but whose greater space needs and lower intensity of use preclude a core location. It is characterized by moderately intensive land use, low (walk-up) buildings, prominent nodes or subcenters of activity sometimes interspersed with "gray" areas, extensive horizontal scale, externally conditioned boundaries, and linkages with all parts of the metropolitan area.4 Its functions may be grouped into four broad categories -- goods handling, goods production, institutional, and residential.

(1) Goods handling functions -- reception, classification, storage, and distribution of goods, including terminal facilities.

(a) manufactured goods wholesaling
(b) produce marketing
(c) bulk goods handling

(2) Goods production (manufacturing) in central Boston consisted in 1957 of the following 2-digit SIC groups in order of employment.5 (Obviously some of these will change in time.)

(a) apparrel -- men's and women's
(b) printing and publishing
(c) food products
(d) leather and related goods
(e) electrical machinery and electronics
(f) machinery not electrical

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4. Horwood & Boyce, p. 20

5. From GBESC report on downtown Boston, based on DES figures

(g) paper products
(h) furniture and wood products
(i) textile products
(j) other misc. manufacturing

(3) Activities devoted to social advancement:

(a) educational -- schools, colleges, universities, research institutions, libraries, museums, etc.
(b) remedial services -- hospitals, clinics, convalescent centers and sanitoria, mental health institutions, research institutions, prisons
(c) social service -- settlement houses, welfare institutions, recreation centers (non-profit), clubs
(d) religious institutions -- places of worship, church admin, places for the dead
(e) the arts -- performing, graphic, music, other

(4) Residential areas (not necessarily to be separated geographically

(a) residence relating to the various institutions
(b) residence for the poor, unfortunate, or elderly
(c) transient residences
(d) residence for certain ethnic groups wishing to retain group solidarity
(e) residence for individuals and families without children
(f) residence for families

(5) Core functions that spill over into the frame

(6) City plan functions, having to do with circulation, transportation, water, refuse disposal, open space etc. (Because of their ubiquitous nature, these functions have been analyzed in a different way, to appear later.)

E. Goods vs. persons orientation.

Besides the core-frame relationship, all regional center functions are classified further into a predominet goods or persons orientation. Many activities combine goods

production and goods handling functions, and many others combine the social advancement group with residence or offices. But usually there is a clear distinction in function and a resulting physical separation in land uses to the extent that their main emphasis is on goods or persons. This cleavage is more pronounced in the frame than in the core, and most pronounced in achieving separation of the extremes of the land use spectrum -- goods production and residence. We find goods and persons orientation combined in retail functions and many office activities. But beyond this, a general physical separation of the two classification not only avoids incompatibility resulting from nuisances, but makes possible more efficient operation of each. Not the least advantage is separation of goods movements from persons movements. In the long range rebuilding of the city a fundamental goal would undoubtedly be a re-grouping of the goods oriented functions into sectors exclusively allocated to them so that no awkward intrusions or enclaves remain in those sectors reserved for persons.

F. Centralization vs. decentralization.

Not all urban functions can operate successfully or (for various reasons) ought to be located at the regional center. When people are unwilling to come to centralized functions, those functions must be decentralized and distributed among people; also as living areas become decentralized those functions that serve them directly tend to follow them. But many functions still cannot easily be dispersed. Much of the recent out-migration of central activities has been due to the lack of adequate space or accessability close in and not to any inherent unsuitability of the central location. Furthermore, conditions which have forced some activities out of the city may be reversed by trends not now apparent. (i.e. a return to the city of middle income residents would increase downtown retail sales.)

Provision of building sites and improvement of transport could re-centralize certain activities, if desired. But ultimate limitations of space requires selectivity. Conversely other functions now occupy this valuable central space which are liabilities to the regional center and should properly be located elsewhere. The functional

diagram (figure 2) and list (pp. 3-4) suggests those activities that belong in a regional center, without attempting to quantify their space needs. Conversely, now, it is proposed that the following functions be encouraged to decentralize to outlying regions:

(a) Living areas for families (with children) of whatever economic, ethnic, or occupational group, together with ancillary functions.

(b) Industrial operations having extensive space needs, or of a heavy or obnoxious character, or those whose labor force resides and linkages occur primarily outside the central area.

(c) Goods handling and storage operations of large scale or for bulk goods, and others not needing rail or port terminals (unless their market is in the central area.)

(d) Extensive utility yards, rail yards, airports, cemeteries, and open space uses

(e) Application of these concepts to actual cities suggests that;

(1) Many core functions overlap into what would normally be considered the frame, and many frame functions occur in the core.

(2) Functional classifications shown on the diagram do not all exist as identifiable areas on the map. Some are thoroughly mixed with others (i.e. goods handling is usually combined with either goods production or retailing)

(3) For any functional classification there may be more than one functional area (i.e. 3 rail terminals, 4 medical centers).

(4) Many special purpose areas on the map may consist of functional sub-categories which require geographic concentration, but which on the theoretical diagram are either split between several

categories (medical service split between professional service and institutions) or appear as part of a category whose other parts have little relationship to it (newspaper publishing as part of the "printing and publishing" industry.)

(5) Besides the economic forces that affect the grouping and sub-grouping of these functions, many non-economic factors,, physical barriers, historic tradition and inertia, prestige, aesthetics, and amenity -- also exert influence.

Despite the above disparities between theory and reality, this model (figure 2) is suggested as a generalized guide to the identification and spatial organization of the functions of the regional center.

II. Spatial Organization.

Basic Question:

Where should functions be located in the regional center and how should they relate in space to one another?

A. Likage patterns in general

Assuming for separation of all urban functions in space, it becomes necessary for them to relate to one another by means of the movement of goods, persons, and ideas. The latter are ubiquitous and independent of distance, but persons and goods movement requires transport through space. A fundamental objective in determining location of any function is to minimize and simplify patterns of movement linking it to other functions with which it must relate. This report will not spell out the linkage requirements for all functions in a regional center, but rather will attempt to identify the important spatial relationships on a theoretical basis and then apply them to central Boston.

B. Goods Movements Relationships

(1) The goods handling sector: (refer to figure 3)

Let us assume a hypothetical city. Railroad lines converge from several directions and feed into two terminal areas to the north and south of the central business district. Each terminal area adjoins a single ocean port lying across one end of the city. The port handles mostly bulk goods which are either stored in adjacent storage yards or transferred to other carriers directly for shipment out. The railroads handle mostly bulk shipments plus some manufactured goods and agricultural produce. Manufactured goods (as a general type) are mostly delivered directly to the manufacturing operations or warehouses served by rail or transferred to trucks which deliver to consignees throughout the region, all as part of an integrated goods-handling operations. Produce is delivered directly to either (a) the large chain store distribution centers located strategically throughout the region or (b) central wholesale market terminal areas for meats and for fruits and vegetables, where the smaller scale retailers come to bid for and obtain their food stocks.

Adjacent to the terminal areas, the port, and goods handling districts generally throughout the region are truck terminals. Trucks are ubiquitous -- they handle most of the manufactured goods and produce in both inter-regional and local transfer, and in this role are in the ascendancy. Also they are the exclusive carrier of consumer goods from the warehouses and plants (scattered strategically throughout the region) to the innumerable retail establishments (even more scattered throughout the region).

Near the port is an airport which plays a minor role in goods handling.

The total goods-handling operation is as decentralized as is retail business and tied to the network of metropolitan rail lines and expressways, leaving the two rail terminal areas to play a declining role. But the latter are still necessary because they are the only two points in the region where direct transfer from ship

to rail or truck is possible. They should incorporate the combined wholesale produce terminals which should also be centralized. Also undoubtedly there is a need for centralization of storage and wholesaling operations for many types of manufactured goods -- it makes sense that this function be located near the hub of the metropolitan highway system as well as near the largest market concentration (the retail core). Allocation of space for such a distribution center for manufactured goods is therefore suggested.

(2) The goods production sector:

Although separate functions, goods-handling and production are usually indistinguishable in land use terms. Manufacturing, being the application of labor to goods, is to some extent a persons-oriented activity and may therefore be located with reference to materials handling terminals or passenger transport systems, depending on the extent to which it is material oriented or labor oriented. This report will not explore here the science of industrial locations, but only note that while a metropolitan area may have considerable gravitational power to attract basic manufacturing, its central city and rail terminal areas no longer have very much.

The confined space near the center should be allocated to production that (a) has its principal market in the center (such as the garment industry); (b) depends upon close linkages with sub-contractors, other business firms, and customers (such as printing and publishing); or (c) due to small-scale or "incubator" nature must have the cheap, versatile space and accessability found only near the center.

In locating these centralized manufacturing operations one might envision two belts or urban land lying for the most part between the terminal areas and regional

transport facilities on the one hand and the urban core with its concentration of mass transit on the other. These belts would be oriented in the general direction of the major truck highway system, which is roughly circumferential about the core. They would have a close relationship to that section of the core occupied by the wholesale agents and brokers, manufacturers' sales offices, and business services. They should be seen as elongated shapes occupying sectors of the frame but not enclosing the core in a single "doughnut" form, since other sectors are required by institutional and residential functions.

Materials would be moved to, from, and between production centers mainly by truck over the circumferential and radial highways and to and from the two terminal areas. Rarely would material be transported across the core (which is the realm or persons-oriented functions) except to deliver to the retail establishments therein.

C. Persons Movement Relationships

In general persons-oriented functions tend to benefit by concentration, with goods-oriented functions peripheral to them. In terms of movement channels this allows pedestrian movements throughout the interior and trucking plus auto access at the edge. This design tends to apply at all scales from the individual block to the whole city with its belt highway.

(1) The Core:

Ideally the CBD core should be built to the scale of the pedestrian and most movement within it should, for the sake of internal efficiency, be via walking.1 Automobiles should be garaged at the edges of the core so that all points therein are within a 5 minute walk ($\frac{1}{4}$ mile) of a peripheral parking terminal. But this logical relationship is impossible in the real situation for unfortunately Boston is committed irrevocably to placing its parking terminals at some of the most central locations in the core, where thousands of vehicles must

1. The Public health justification for maintaining the pedestrian character of the core will not be developed here. But I think sometime a master's thesis should be written on the relation between public health and a return of the urbanite to the use of his legs.

penetrate the core twice each day. In order to preserve the last vestige of pedestrian character in the core it is heartily recommended that further construction of downtown parking garages cease and that those existing be either demolished or so priced that only short-term parkers will use them, and that new cheaper facilities be built on the periphery. Access to the core for most of its working force would be via mass transportation, which would (as it does now) deliver passengers at various points in the heart of the core.

Further discussion of spatial organization of functions within the core will not be attempted here, since this has been thoroughly dealt with in the CBD report.

(2) The sector devoted to social advancement:

Of all the activities of urban civilization those dedicated to the advancement or protection of the human condition and culture, as represented by our public and private non-provit institutions, have perhaps the greatest potential for growth; and in this particular sphere Boston stands almost pre-eminent among American cities.

These are urban functions and it is important and necessary that they occupy part of the regional center. Although numerous and diverse they are grouped here into five classifications: educational, remedial, social, religious, and artistic.

These institutions are overwhelmingly persons-oriented. The larger ones, such as medical centers and universities, tend to be whole communities in themselves; yet the linkages between them are numerous and complex and probably more important than their linkages with the business community. Their physical plants represent enormous fixed investments that are not easily adaptable to other uses -- hence the big ones are immovable.

Within the regional center institutions tend to dominate the persons-oriented sector, or specifically

that part of it in the frame. They relate closely to the intown residential areas, not only because of mutual compatability, but because many institutions serve (or include) a residential function. Although frame functions, they require locations having good access by mass transportation and auto from the rest of the metropolitan area and where regional truck movements will not interfere.

In Boston the larger institutions (in the aggregate) form a crescent configuration about the westerly arm of the core area, with its two ends respectively at the Massachusetts General Hospital and the New England Medical Center and its middle at the Harvard Medical Center. Smaller institutions are scattered throughout the Back Bay and South End. It is significant that this sector approximately complements the goods-oriented sector that has developed by matural forces on the easterly side of the core. This relationship is functionally and aesthetically desirable and should be maintained.

(3) Intown residential areas:

The physical and location requirements for intown residential areas will be discussed in a later section in conjunction with housing demand.

III. Size (i.e. geographic extent)

Basic Question:

(a) What is the optimum land area for the central city to best accommodate all functions that may in the future be located there?

Approach: This and succeeding sections will descent from the theoretical model and concern themselves with the specific geographic situation.

A. The Central City Defined

Central Boston is a peninsula formed by the Charles River, harbor, Fort Point Channel, and highways and railroads of the

South Bay. The sector which joins Boston to Roxbury is soon to be traversed by an expressway which will go further than any other conceivable structure toward completing the physical delimitation of this area. The inner belt, located to best satisfy the manifold requirements of regional circulation, seems also to create out of the peninsula an area of appropriate size and shape for future central city needs. Whether this area of 2500 acres is too large or not large enough is probably an academic question -- its limits are relatively fixed and its capacity is both ample and flexible, although there is obviously a limit for those functions that cannot be housed in multi-storied structures. It is probably larger than today's needs require, but its size must be judged in terms of the distant future.

B. Evaluation of Overall Size:

(a) Time-distance relationships of main internal movements:

There are no accepted standards for the amount of time people will spend traveling about a city in the normal pursuit of business or pleasure. Also the speed and efficiency of internal movement depends upon the mode of travel, the terminal problem, the level of transportation technology, and the time of day. But generally speaking this area of 3 miles by 1½ miles seems compact enough so that the individual can visualize it in its totality and traverse it with a nominal investment in time.

(b) Metropolitan area population as determinant:

Although one would suppose some general relationship exists between central area size and SMA population, no correlation is evident from examination of available studies of other central areas. Generally such areas are defined by physical barriers. Many cities are now building inner loop expressways, but the areas they circumscribe are not all the functional equivalent of central Boston, and their sizes may not have any meaningful relationship to the population or growth potential of their respective metropolitan areas. Some (such as Detroit with a circumscribed area of 1.03 sq. miles) have an inner loop drawn tightly around their existing

urban cores, while others leave, for a variety of reasons, considerable of the frame area within the loop. (Boston, in the latter category, has 3.4 sq. miles within its central artery-inner belt-Storrow Drive loop.)

To summarize, Boston is probably fortunate in having so much central space for development of future central activities. This allows a flexibility that could in the interim before full utilization of the land is achieved, invite (a) low density development (b) proliferations of functions better located elsewhere, (c) a laxity in planning and development control, (d) a scatteration of activity centers tending to generate more traffic and complicate internal linkages, (e) continuous attempts to meet the unquenchable demands for parking at grade, thus destroying the urban character of the city. Remedies will be outlined in the next section.

IV. Density and Building Type

Basic Question:

What intensity of land use should obtain in the several parts of the central area in order to achieve the functional efficiency and urban character desired?

A. For the Central Area in General

Intensity of land development is mainly a matt er of the economics of construction and what the market will pay for new space of various types and locations, and only to a secondary extend one of density control. Such control usually establishes a density ceiling and economic reality a floor. Zoning has traditionally promoted lower densities, lower land coverage, and sometimes lower buildings, and private investment generally the opposite. But it is no longer clear that public policy ought to hold so rigidly to these ceilings, or that it should not also be concerned with a floor (i.e. a minimum FAR). The latter would be justified in order to achieve a higher tax return, and also a city whose character is urban, compact, and pedestrian-oriented, in view of the likely effect of the land writedown in abetting current trends in private construction toward low density, auto-orientation, "park-like" developments, and

decentralization. In spite of the relatively large amount of land in the central area as proposed (2500 acres) and the CBD (700 acres) Boston cannot hold its place as the dominant center of the New England region unless it promotes (for the core area, at least) a high intensity of land use.

B. The Core

Determination of core area density should be directed toward achieving compactness, efficiency, pedestrian orientation, exploiting advantage of transportation and terminal facilities concentrated there, and yet avoiding the grimness of overcrowding. Core density should be kept high (as recommended in the CBD Report). Yet the present maximum FA R of 10, which with full bonuses could go as high as 14, seems high enough to give all the concentration that transit facilities can handle and yet produce open space around buildings of the greatest bulk.

C. Intown Residence

Will be discussed in a later section.

D. Industrial Areas

Density in industrial districts is largely a function of the particular process to be housed, and of the economic realities of the particular industry. Most goods-handling and production operations now require inexpensive one-story plants on ample sites with plenty of parking at grade. Construction costs for new plants at such density (FAR less than 1) would often average less than the cost of assembling slum property. (bldg. cost @ $8.00/sq.ft=$350,000/acre, which is less than gross redevelopment cost (for example) of Castle Square project: $5.5 million/25 acres=$450,000/acre

It is difficult to justify such low density construction on a large scale in the central city. Despite current trends most new industrial plants here should be over one story high fitted with elevators and modern materials handling equipment, adaptable to a wide variety of operations

and designed to use building sites efficiently after the needs of parking have been met.

B. Institutional Areas

Density and building types for institutional and other uses outside the core is a matter of meeting individual requirements for each use and will not be dealt with here.

V. Capacity (Gross floor space)

Basic Question:

How much space should be allocated to each function in the central city in its long range development?

It is not difficult to hypothesize upon the functions that should in the future occupy the central area and the generalized organization that they should assume in space, but to estimate, in any meaningful way, the relative amounts of floor space or land area that each will require involves quite a different level of knowledge and planning. If the city's future is to follow the same course as its recent past, then the projection of past trends would be a relatively easy and definitive method (although such extrapolation is risky for any considerable period ahead). But the future will decidedly not be an extension of the recent past, and certain trends may be reversed by forces not now visible or operative.

Therefore, applying the principal that the future is for those who take advantage of it, the question of quantification of central city functions may be gotten at by asking simply what kind of a central city does Boston want to be and has the propensity to become? The answers are not obscure. From the beginning Boston, and the New England region which it dominates, were the center and fountain head of North American culture and initiative. Even today it is a center for learning, remedial services, the production and dissemination of ideas, know how and expertese, almost unrivaled in the nation. More than any other function the great institutions for social advancement most significantly embody the city's future role and possess the greatest potential for growth -- although other functions in the spheres of specialized production, managerial talent, finance, and residence somewhat share this role.

Space should therefore be allocated to fully accommodate the needs of the institutions (dimensions of which are now largely known), and needs of future institutions that undoubtedly will be established

whose dimensions are not known). Allocation of space for the residential sector, which would tie in closely with the institutions, is discussed in a later section.

Goods handling and manufacturing functions can probably utilize more space than the central area can provide for them (judging from the current market). Although some recentralization of these activities is necessary and important, they should generally be assigned a low priority status in the allocation of central city space.

Space needs for core activities have already been estimated in the CBD Report for a 20-year period by projection of employment trends. While space needs for the distant future may be much different no new estimates will be attempted here.

Parking is probably the one function that will, in the long run, impose the strictest limit on the capacity of the area or any part of it to accommodate intense activity.

VI. Form (overall pattern of structures in space)

Basic Questions:

What form is best for the central city to accommodate its functions and their linkages in the most efficient way and to maximize aesthetic satisfaction and amenity?

Approach:

Examination of present and possible future alternative patterns resulting from the grouping of the main activities in the overall developed area.

First it should be recognized that the overall shape of Central Boston, as determined by its surrounding water bodies and physical barriers is, or soon will be, relatively fixed and probably should be regarded as one of the "givens" of this analysis. If Boston were situated in a plain where outward expansion is possible, a more concentric or symmetrical shape might be more efficient, but hardly as satisfying aesthetically.

But this section is primarily concerned with the metropolitan-wide distribution of regional functions -- central retailing, offices, business and professional services, government, certain intensive manufacturing and institutional activities -- and with the pattern they make on a background of low intensity uses.1

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1. Much of the content of this section is derived from the general plan outline of S. F. Hodges, 1959. For a fuller exposition and slightly different conclusion see that report.

A. Present Form of Central City:

A dwindling downtown of central business activity located at the point of highest concentration of transport and terminal facilities, having radiating arms of business use out along major streets and numerous specialized uptown centers or nuclei.

Critique:

This form has evolved out of the interplay of laissez-faire forces and transportation technology of the past. It is not the most efficient form for today's urban functions and probably will be changed by new transportation facilities and land use policy.

B. Alternative Future Forms:

(1) "Dispersal and abandonment", in which downtown activities would be dispersed among a series of centers generously spaced throughout the metropolitan area, rather than concentrated within a single dominating central core. Such a pattern has the advantages of affording simpler journeys to work/market/play, strengthens local self-sufficiency, allows greater flexibility of development, and tends to distribute more widely the stimulus produced by new investment. However it would tend to threaten the present structure of financial commitment in the concentrated core, produce less efficient business linkages; retard the formation of special use districts, and would require a major recasting of plans for regional transportation.

(2) "The hub complex", in which central, region-serving activities would continue to be concentrated for the most part within a single core area and most decentralization discouraged. This pattern would offer maximum opportunity for business linkages, perhaps offer consumers the most in specialized goods and services, protect present financial commitments in the core area, and exploit the centripedal circulation assets built in and

being built. It has the disadvantages of imposing on the community complex and wasteful journeys to work/market/play, achieving "stability" at the expense of flexibility for change and growth, and perpetuating a condition of economic dependence of outlying communities on an "imperialistic" central core.

(3) "Limited decentralization" (called by Hodges "planned decentralization") in which the present downtown will remain the dominant center of the metropolitan area, but will share certain central, region-serving functions with a series of special purpose uptowns or sub-centers to be situated for the most part close to the core. Collectively, then, the uptown centers would amount to an enlargement of the present core to form what we have previously labeled "the central city".

By such a pattern most of the advantages of both 1 and 2 (above) could be achieved -- the "hub" with its heavy financial commitments, vital business linkages, and opportunity to offer consumers the most in specialized goods and services would be preserved and enhanced; present and prospective regional transportation systems would be explointed; access to work/market/play would be improved (though to a limited extent); and adequate flexibility for growth could probably be achieved. Although such centralization would tend to retard development of local economic self-sufficiency and identity of outlying sections, this would not be inevitable nor necessarily a bad thing for the metropolitan community.

Limited decentralization is the recommended pattern. The emerging role of the new central core and uptown centers has been outlined in the section on functions. This pattern may be readily seen to correspond to the core frame concept of functional organization, wherein those acitivities needing auto access and having linkages to the metropolitan area which predominate over internal linkages (including many heretofore core functions) would properly belong in the frame. Consideration of the possible grouping of such uptowns suggests two alternative ultimate patterns to the above concept of limited decentralization.

C. Alternative Patterns of Limited Decentralization

(1) The expanded core concept, in which the various uptown centers, comprising for the most part frame activities, develop as an immediate accretion to the central core and collectively form a greatly expanded (but unrelieved) central core area, eventually filling in most if not all of the Boston peninsula out to the inner belt.

This form would allow easier auto circulation throughout the expanded core area because of lower densities and more dispersed foci of traffic generation, but would thereby tend to attract more traffic and make pedestrian circulation more difficult. Also it would tend to require a reshaping of mass transportation, if not a replacement of it by the auto. And most important it would simply eliminate much of the present intown residential area, or place it beyond walking distance from the core area.

In actuality, a low density, spread out central business district (particularly industrial and auto oriented) throughout most of the Back Bay and South End region is an ultimate consequence that should not be overlooked particularly if the automobile becomes dominant, transit is not improved, and pressure for such development continues in the central city. Because most of that area consists of substandard housing where wholesale clearance and change of use is a possibility, such an extension would be easier and cheaper than to produce the equivalent space within the present CBD by the delicate surgery of replacing individual buildings. The expanded core might then be considered the dominant center of the metropolis, eventually overtaking and replacing the old core, which would be unable to attract new investment and would therefore stagnate and decline (dispersal and abandonment). This form would be in keeping with an automobile city but is not recommended for Boston.

(2) The "hub and ring" concept in which the various uptown centers develop a short distance beyond the edge of

the central core at points strategically related to the circumferential highway, and collectively tend to form a continuous ring about the core. The intervening space would then contain ancillary functions, residential areas, institutions, and parking. This pattern would allow intown residential areas within walking distance of both the core and the uptown centers, take advantage of the inner belt highway and hence provide better auto linkages to the metropolitan hinterland, and achieve moderate decentralization without destroying the concept of the regional center. Disadvantages would center around the attenuation of business linkages with core functions (but it is by no means certain that these linkages would be impaired.)

In actuality it should be recognized that both trends will probably occur (they are not mutually exclusive). The westerly arm of the CBD will expand by accretion in all directions, and new uptown functions will simultaneously develop along the inner belt. Also the present CBD, being an elongated shape extending from the center of the ring to an edge, seems to suggest the inevitability of both types of growth. The principal to be observed here is that both types of central city development should be judiciously guided into fairly restricted areas to avoid a scatteration of low density business and industrial uses throughout the central city area. A corrolary principal is to locate in the CBD, or the areas immediately contiguous thereto, those functions with predominantly internal linkages, and in the peripheral uptown centers, those whose main orientation is toward the metropolitan area at large.

VII. Grain (defined as the level of intermixture of land uses)

Basic Question:

What level of intermixture is best to provide the most efficient groupings of in erdependent functions, avoid incompatibility due to nuisances, and achieve the maximum in aesthetic quality, variety, and interests.

A. Organization of Functional Districts:

(1) Special use districts: The central city is a collection of specialized districts (such as garment center, medical center, retail core, government center, office core). Nowhere else in New England are so many important ones grouped within walking distance of one another. The emergence of additional special use areas in the future is likely if not inevitable.

A desirable objective would be to achieve well-roundedness in these respective specialties, incorporating a degree of functional self-sufficiency. (For instance a medical center could well include, besides its remedial functions, medical office buildings, research laboratories, production centers for medical equipment, educational facilities, eating places, and housing for staff and patients). Where two or more mutually compatible but functionally unrelated uses compete for the same space, obviously one must give way to the other and a division of the contested space achieved on the basis of some equitable principal, such as the greatest good for the greatest number, rather than by monitary considerations alone. A pattern of special use districts may be visualized as coarse grain development.

(2) Mixed use districts: At the other extreme is the mixed-use district, in which functions do not require concentration for successful operation but, on the contrary, thrive in clcse proximity to other functions with which they have no apparent linkage save the propensity to attract large numbers of people. (Examples are seen in most local community centers and more recently in the suburban shopping center and unified urban comple x, such as Baltimore's Charles Center). Such mixed-use districts tend to perform (at a much reduced scale) the role of the central city as a whole. Here there would be no giving way of one specialty to provide space for another; there should however be a striving toward well-roundedness, diversity and a dynamic mix that would afford a balance between day and night use. Yet it would still be necessary, in most

cases, for a particular function to assume the role of prime mover of such a center in order to attract around it diverse activities (somewhat in the way the Prudential building is the prime mover for its mixed use complex. In this context the mixed use center seems a useful framework for inducing intown apartment development -- where adjoining offices or retail uses act as prime mover. The mixed use center obviously has a role to play as the focus of commercial activity in residential communities. It is also needed to serve the various specialized elements of the central city, and in this context should probably be located between (or in close proximity to) the special use districts. Mixed-use districts represent fine grain development.

B. The Form of Functional Districts

The form suggested by present trends for both special-use and mixed-use districts is the superblock, in which auto access is on the periphery and the pedestrian reigns throughout the interior. Increasing localization of certain persons-oriented activities within superblocks and corresponding decline in the traffic street as the main locus for pedestrian activity is practically dictated by the ever increasing volume of traffic, to which the central city must in some measure adapt itself.

But an entire city of superblocks could be visually boring as well as functionally rigid. Easy movement for pedestrians throughout the central city and between superblocks should be built into the overall design by providing consumer-oriented business frontage along traffic streets as well as internal pedestrian ways. But such frontage development should be regarded as a kind of border to the superblocks; the focus of activity would be oriented inward rather than toward street intersections where it has developed by tradition. In redesigning the city superblocks and frontage strips should be judiciously intermixed in a way that provides visual interest, accommodates through traffic, and facilitates the functioning of land uses. A given sub-center could well comprise a single superblock plus adjacent frontage. But pedestrian-oriented frontage along both sides of a main thoroughfare -- or worse, at the four corners of an intersection -- should be avoided.

To the extent that the central city becomes more completely auto oriented, the development of the mixed-use internally oriented superblock with its own built-in parking and pedestrian ways should be seen as the most logical remedy.

VIII Circulation - Transportation

Basic Objectives:

A. To achieve a comprehensive system, integrating all modes of transportation -- rail, mass transit, bus, auto, truck, cycle, pedestrian.

B. For mass transportation:

(1) Integrate all mass transit into a single operational system, organized in a heirachy of levels, depending on distance to be served, desired speed, and passenger density.

(a) inter-city and intra-city rail
(b) rapid transity (erd rail) trains
(c) "PCC" transit
(d) express bus lines
(e) feeder bus lines

(2) Locate stations at points of intersections of the various levels of transit to facilitate transfer from one line or level to another, and elsewhere so that all points in the CBD are within 1/5 mile of a station and all other points in central area are within 1/2 mile.

(3) Institute a common fare system with universal transfer.

(4) Minimize the number of transfers necessary to reach any focal point in the central area from any arterial line.

(5) Build transit lines generally through areas of densest population.

(6) Build rapid transit and street car lines to a 10 or 12 mile radius from center beyond which commuter rail service would operate.

C. For rail:

(1) Connect North and South Stations by a tunnel, giving through service for all passenger lines, and possibly for freight at night.

(2) Eliminate the two stub end stations and replace with about 5 simple platform-type stations at subway level.

(3) Operate all rail commuter service in light weight, double-ended electrically powered trains (25KV-50 cycle AC) using minimum of personnel.

IX A Case for Urban Living, in General, and Within District 1, in Particular

Despite the decentralization of living areas which has been the dominant trend in the U.S. in recent years, a return to high density urban living (already strong in New York and emerging in other urban centers) is an incipient movement comprising an increasing (but as yet unmeasured) segment of the housing market. Housing centrally located within large cities, is definitely needed and should be provided as a part of the central city renewal program, in spite of serious economic difficulties in apartment construction. What the central city has to offer in terms of residence is the following:

First, from the point of view of the potential urban dweller, there are numerous reasons for urban residence. Very important is convenient access, particularly even walking access to one's place of work, to shopping areas and to entertainment facilities. Also important is the greater variety of choice for shopping, entertainment, selection of friends, and general environment; greater stimulation produced by a concentration of people enabling more direct conversation with a wider variety of people and more indirect contact with different ways of living, doing things, thinking and feeling; yet greater freedom (a) for a more independent life with fewer personal contacts and responsibilities, (b) to withdraw but still watch people from a distance, or (c) to lead one's life in an unconventional manner; and finally the diminished burden in maintaining a home.

Second, from the point of view of those who live elsewhere in the metropolitan community, urban residence sustains the unique concentration of shopping, entertainment and cultural facilities

which could not otherwise exist at such scale and gives suburbanites an opportunity to see and occasionally participate in the generally more varied and intense activities of urban living.

Third, from the point of view of the CBD there is an important reason for downtown living areas, for many of its establishments depend upon the size and variety of urban populations to maintain their large size and/or their specialized products.

These three points of view, moreover, would argue especially for urban living within Boston's central area, for the vast array of features and influences (environmental and man made) that render the Boston metropolitan region such as attractive place of residence could apply to central Boston to an even more intense degree if the latter's assets were properly explcited in an overall renewal program. But before proposing a physical land use plan for a rebuilt central community, it will be necessary to examine the present and potential demand for housing here.

1980 Housing Demand in District #1

INTRODUCTION AND CONCLUSION

The purpose of this study was to produce, in the absence of a thorough housing market analysis, a plausible estimate of possible demand for residence in a future rebuilt downtown Boston. Underlying this purpose was the assumption that urban renewal will ultimately affect most of the central area. Slums will be replaced primarily by modern apartments or new non-residential structures, and those families now compelled to live in the central area because of economic circumstances or racial prejudice may find adequate housing elsewhere and their places taken by people who desire urban living.

The particular study date in 1980, by which time large-scale urban renewal would presumably have taken place.

The method used in this study was to analyze the population in terms of identifiable groups. It was not meant that these groups should necessarily live separately. In fact, generally, urban living should imply an exciting mixture of population types in each living area. The reasons for using groups in this analysis was, (1)greater facility in estimating a 1980 demand in an improved central area, (2) more precise planning of building and living unit types and

community facilities within each residential area and (3) greater facility in adjusting this demand to the capacity of the district. After the important groups had been identified, intuitive estimates were made, based upon certain known trends within each group. the assumptions underlying these estimates, both in the text and on Tables 1-4, are based on a careful study of the literature on population and housing, some disagreement with them is obviously unavoidable.

The conclusion of this study may be found on Tables 2-4. In order to produce an ideal 1980 population statement, a capacity study would be needed along with assumptions as to the proper building types and densities for the downtown area.

THE STUDY

The first step was to point out certain types of people either at present living in District 1 orpotentially likely to have an interest in the area. Roughly, there are five different classifications: minority, age, family type, occupation and income. Certain groups within these classifications express definite motivations for District 1 residence either as the District is now or as it might be. (The motivations are implicitly stated for the particular groups selected within each classification.) A list of these groups can be found on Table 1. Figures are given for the City of Boston and the Boston Metropolitan Area, as well as for District 1, because of the downtown area if improved would be likely to draw some portion of the people at present residing outside District 1.

Table 2 goes a step further to estimate what might be the size of these groups in 1980. In order to arrive at these estimates, first the 1950 size of these groups was considered and then the probable growth rate, which was primarily determined by an appraisal of the various forces tending to pull the groups away from and toward District 1. The following are the assumptions upon which the estimates on Table 2 were based, including a description of each group, the forces affecting it, and the estimates of per cent change in population by 1980 (which are summarized in Table 2.)

MINORITY GROUPS

The 1980 size and composition of minority groups is the most difficult of all the classifications to access, primarily because political occurrences, such as Federal Government immigration policies, political events and living conditions in other countries,

and segregation rulings could radically alter even by 1980 the types of minority groups in the Boston area as well as the size of present groups. Certain Latin American groups for example, might greatly increase in size. Because of lack of information, however, this study has attempted to deal only with the important groups residing in District 1 in 1950.

Foreign-born White

In 1950, nationality groups in the foreign-born-white category in District 1, included the Syrians and Greeks, the Albanians, the Poles and Lithuanians, the Puerto Ricans and the Italians. However, only the Italians living in the North End concentrated in large enough numbers to warrant particular consideration apart from the rest of the population.

Most people in Boston are familiar with the attractions of the North End, because this commercial, aesthetic and historic center is important to Boston's population at large as well as its Italian-American population. Moreover, the attraction of this community for Italian-Americans is also well known, for the North End has had the largest concentration of Italians in Boston, with many walk-to-work opportunities, and in short, is a very convenient area for newly-arrived immigrants to adjust to. The value of this area for those who have been in the United States for some time is implied in the discussion of the second and third generation Italians, for the characteristics of both are similar. There is, in fact, a foreign-born population of considerable size with deep roots in the North End at present, and even certain persons among the large numbers of Italian foreign-born living at present outside the North End would be likely to change to the North End if physical living conditions there could be somewhat improved. Some of these people have already expressed a desire for residence in rehabilitated and/or new buildings. And yet, there are forces that are cutting down on the North End foreign-born Italian population in spite of the attractions of this community. Among these, especially, is the existence of Italian population concentrations in other areas of Metropolitan Boston, with job opportunities close by and where housing for the same price is in better condition and in more amenable surroundings. Also important is the desire of some to assimilate immediately; and even when assimilation is not desired, job opportunities sometimes compel residence away from Italian concentrations. As assimilation continues to become easier, moreover, fewer persons will desire to live separately from the rest of the population. With this in mind, and because of

the stable character of this community, it would seem that another one or two generations at least would probably elapse before this Italian concentration might be disseminated. An estimate of the probably size of this group is included with the "Second and Third Generation" estimate in the next paragraph.

Second and Third Generation Wishing to be Associated with Foreign-born White

Much said about the foreign-born Italians can be said about the second and third generation Italians wishing to remain in an important nationality concentration. However, more than convenience and familiarity may keep these people together for political and business interests sometimes become more firmly established with the second and third generation. Also, these people probably contribute more in building this community into the health social group that it is and especially in making the North End a benefit to Boston's population as a whole, by being an interesting, picturesque, and thriving commercial center. Forces pulling the second and third generation away from the North End are stronger, however, ... with an increase in prosperity, better ability to assimilate, and better living conditions elsewhere. Possibly some prosperous members of this group would be attracted back by new apartments built on the periphery of the North End overlooking the harbor. In sum, the total population of the North End will probably in another generation at most maintain its present size and at minimum decrease by 40%.

Non-white, Negroe

In 1950, the Negroes did not comprise a very large segment of District 1's population (see Table 1); but since 1950, the group has probably doubled or tripled in the area. The longer redevelopment of the South End and Lower Roxbury is postponed, the greater will be the probably increase of this group and thus the more difficult will be the ultimate rehousing of it. It is assumed that the physical and social deterioration of the area the negroes now occupy in District 1 will lead to total redevelopment and this displace the present inhabitants. This study will not attempt to spell out where they might be rehoused. However areas outside District 1 could absorb many of the displaced persons, especially because they are generally in consideraly better condition, built to a lower density and more amenable than the negro living areas near the center of Boston. Negro housing needs, it would seem, should not and need not be treated separately from the rest of the population, in District 1, at least.

Non-white, Other (the Chinese)

There are strong forces maintaining the present size of the Chinesepopulation concentration in District 1. Some of these forces are commendable, others probably are not. Certain Chinese businessmen have a reason to encourage the poor housing conditions near their restaurants, for cheap housing nearby provides them with cheap labor. However, certain other spokesmen of the community say that more people would live in the area if the housing were improved. There is good reason to believe this, for Chinese schools and other cultural and social activities, along with food stores and restaurants, draw many of the Chinese to the South Cove quite regularly. The restaurant and food store area of Chinatown is,of course,an important asset to Boston as a whole, as well as to the Chinese population; but the living area close by may not be absolutely necessary to support the commercial area. Chinatown is a strong cultural and social center, yet many of the Chinese have business interests outside Chinatown; many with families do not wish urban residence and others even wish to integrate fully with the American culture. Consequently, for the short period of the next twenty years it would seem that the Chinese in Chinatown might at most increase 20% over their 1950 population or at minimum maintain their 1950 numbers.

AGE GROUPS

Young Persons 16 to 29 Years of Age

District 1 has an extraordinarily large percentage of its population in this category, for the large number of universities and colleges in the Boston area draw young people to work in the CBD merely for proximity to a university environment. Work opportunities alone draw a high percentage of young people with above average educations in mobile, professional occupations. District 1 itself has a large number of educational institutions, particularly of the type that do not provide domitories thus necessitating a high percentage of independent living in this age-range. (see "Occupation groups, Students" for full discussion). National trends for this age group, show a rise. By 1975 the 20-29 year group is predicted to increase 63% as compared with a general population increase of 34%. The 30 to 39 year group which will increase only 4.1%, has the highest percentage of homebuyers, and therefore are unlikely District 1 residents).1

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1. Rental Housing: Opportunities for Private Investment, Louis Winnick, Action Series, p. 219.

College-age persons in New England will increase 50% in the next ten years;1 District 1 rate of increase might be greater because the central areas large number of small institutions which might very likely increase more proportionally than the larger institutions, many of which have already reached their optimum expansion point. Yet another indication of increase is that the trend is toward permitting more young people to live independently. However, there are forces limiting the expansion of this group in District 1. Among them are increasingly earlier marriages and child-bearing, which draw many to the suburbs; mortgage and tax policies that favor home buyers; easy access by MTA, train or car to District 1 from other living areas which are cheaper and also have rental living units, some of which being even quite urban in character (Harvard Square, for example, and others); increasing rate of car ownership; and increasing job opportunities outside District 1. In spite of these strong forces drawing young people away from the area, this District will continue to attract a large percentage of young persons. Bearing in mind that the young persons figure for 1950 on Table 2 includes persons not living independently, it would seem that at most this figure might increase by 75% by 1980 or at least remain the size that it was.

Middle Aged, 50-64 years

Some indication of the future size of this group in District 1 can be gotten by a few general predictions. Persons 50 to 69 years in the United States as a whole are expected to increase by about 38% by 1975.2 And yet, in Metropolitan Boston, by 1970, persons 45-64 are expected to increase by about only 12%3 In order to project these figures to the year 1980 and adjust them to District 1, the forces pulling this group toward and away from the downtown area must be understood. Many persons would find their needs better satisfied by changing their residence to a smaller dwelling unit after their family has grown and left. Also the excitement, cultural advantages and convenience of a more compact urban environment should become desirable. The fairly large number of single persons in this group (the widowed and separated included) should especially find urban residence attractive for needed social contacts as well.

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1. New England Business Review, April, 1960
2. Rental Housing, Opportunities for Private Investment, Winnick p.215
3. Population of Greater Boston Projected to 1970, GBESC Report p. 3

However, an extraordinarily large number of forces limit the size of this market. With present investment in existing residences outside District 1 (with the mortgage often nearly paid and the house much depreciated in value), it is often financially very difficult to move to smaller quarters. Many desire to maintain their old home even for mature children and many desire to remain in the area they have come to know well, where they have social and economic ties. Others' wish to postpone their move, until retirement, when an even more advantageous move could be made to a more amenable climate.

(This latter move may become even more attractive as residential communities in southern climates, expecially Florida, mature and acquire more extensive cultural and aesthetic amenities). Furthermore, even in the Boston area, present outlying urban centers will become more urban, transportation facilities to the city will be somewhat improved, car ownership will continue to increase, and new rental apartment units will be built outside District 1 as well as within it. Furthermore, job opportunities will increasingly be located outside District 1. Therefore, in view of the large number of forces pulling this group away from District 1, a 20% increase may be the most that can be expected and probably 15% would be the minimum decrease in twenty years.

The Elderly, 65 years and over

In spite of the fact that the space needs of the elderly are even lower than those of the middle-aged, persons over 65 have the highest home ownership rate of any age group. Investment in present housing is even more decisive for this group, which (because of retirement) would have considerably lower incomes than the rest of the population. As with the middle-aged, social and other economic ties to the community keep and will keep the elderly in original residences. Improvements in the transportation system however, would not be as important as for other age groups, because many of the elderly can not or should not drive cars and long rides in public vehicles are often undesirable. For the elderly, a more amenable climate is sometimes not only preferable but necessary, and often because of a decline in health the cultural amenities of Boston diminish even more appreciably in importance in comparison with physical amenities of southern or western climates. Those who wish to stay in Boston and yet still move to an apartment, even at present could find many such units, in convenient, interesting urban areas outside District 1. And some of the elderly are living and will

continue to live with relatives outside District 1. However, there is good reason to believe that the elderly will increase in District 1 considerably more than the middle-aged group. First, in the United States as a whole the elderly will increase somewhat more than the middle-aged groups. Persons 60-69 will increase only 37% but persons 70 and over will increase 49%. Also most of the expected 55% increase in single persons will be in the older age groups.1 Moreover, by 1970 in the Boston Metropolitan Area in particular, persons 65 and over will increase by about 40% as opposed to the 12% increase for persons 45-64.2

There are many indications that District 1 might get a large portion of these increases predicted for larger areas than District 1. First, probably a very high percentage of the elderly of all types presently living in District 1 would like to remain there, because of the convenience they already have and social and economic ties to the area. Second, as for general reasons for District 1 residence, Winnick, (an authority on rental housing) feels that disallusionment with the suburbs is likely to start with the elderly.1 Reasons for this may be that the bustle of the city should attract the large numbers that exist in this group who enjoy watching people a large portion of their day, also stimulation from urban residence is a particularly good influence upon this group (for the elderly should be encouraged to remain productive after retirement and longer life expectancies should especially make this feasible), the large number of hospitals with geriatric facilities which should attract certain portions of this group who because of regular visits would like walking access to these facilities, and the extraordinarily large number of single persons in this group (the result of being widowed or separated by this age) which should provide a fairly large market for apartments in a compact highly urbanized area, such as District 1. Finally, even if many of these people could not afford the shift to smaller quarters, there is a good argument for suitable public housing for these people, simple because abandonment of their homes, too large for the elderly to maintain properly is good for the community in which the former residences were located. Such public housing, a good portion of it in District 1 does seem a strong probability in the near future. Consequently, by 1980, a 50% increase might be expected or at minimum, a maintenance of the 1950 size of this group (in spite of temporary and even permanent displacement of many low income elderly persons).

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1. Rental Housing: Opportunities for Private Investment, Winnick, p. 215
2. Population of Greater Boston Projected to 1970, GBESC, p. 3

FAMILY TYPE

Single Persons

As referred to before, an estimate of the increase expected for single persons by 1975 in the United States as a whole is 55% over 1950.1 Most of this increase is expected to occur in the older age groups, primarily with the widowed. District 1, being the large important metropolitan center that it is, is an ideal gathering place for unattached persons who need to meet people, who wish to participate in a wide variety of cultural activities, or who wish to be left alone to lead unconventional lives or merely to watch from a distance other people leading their lives. The convenience of downtown living should, as has been said before, appeal especially to older persons. However, there are many other living areas in Metropolitan Boston, some of which are likely to become more urbanized in the next 20 years thus drawing away this group. Moreover, job opportunities outside District 1, improvements in metropolitan transportation facilities, a generous number of rental housing units outside District 1 and increasing car ownership among the population will also draw single persons from the downtown area. Among the elderly, southern climates will draw some people away. However, it would seem that District 1 still might get at least its share of Winnick's estimate of the increase in single persons. Thus a 60% increase in single persons would not appear to be unreasonable and at minimum the 1950 size would not change (it should be borned in mind that in 1950 District 1 already had a high percentage of the distribution of single persons in the Boston Metropolitan area -- see Table 1).

Married Persons without Children

This group should find District 1 attractive or unattractive for the same reasons as the single persons group. However, the detractive forces are somewhat stronger because younger couples often buy or rent houses in anticipation of children and older married couples stay in their former residences or move to better climates, for reasons stated before, yet, probably because of the very limited number of good living areas in District 1 and the lack of modern apartment buildings, the 1950 figures show an unreasonably small percentage of married persons without children in the District (see Table 1). As for the future, mobile professional persons should increase considerably in the Boston area and some of this increase should raise District 1's "married, childless" figure. (See below for discussion of professional workers).

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1. Rental Housing: Opportunities for Private Investment, Winnick, p. 216 and 215

Moreover, the indications of pessimism about the return of older married persons to the central city may be overdrawn, for an Action-Fortune survey discovered that the single most important segment of demand for new urban apartments was among older married couples.1 It would seem, therefore, that the married, childless group is likely to increase considerably, 25% at a minimum, and that it might increase as much as 110%.

Married Persons with 1 or 2 Young Children

A certain portion of this group may find it economically more feasible to remain in the apartment they held before their children or child arrived or to move to another intown apartment (with an extra room) for a short while until they can better afford the move to a house or until the father has a more permanent position (especially important, possibly for certain professional and technical persons who may be transferred to several cities in quick succession at the beginning of their careers). However, with present house mortgaging policies, most people can afford the more desirable move to a house. Or should this not be possible, there are many rental opportunities for both houses and apartments outside District 1 where there is more room for children to play. Furthermore, many of this group live outside District 1 even before the children arrive. In addition, continuing easy mortgage and tax policies, along with an expected rise in real incomes, and increasing ease of quick resale of a house, should encourage many more people to buy a home when children arrive, even before the husband is settled in his permanent job. In fact, the only persons with children that might be attracted to an urban apartment might be those who could afford a nurse or maid to take care of their children (because the play areas would be likely to be out of sight of the individual living unit). At least a 75% decrease may be expected and possibly even a 90% decrease in this group.

Any Family with a Working Wife

According to Louis Winnick, the family with the working wife is generally thought of as a phenomenon of prosperity and consequently can be expected to gain in importance. It is already, he says "one of the most commented upon development of our time".2 In the United States at present, more than 2 out of 3 working women are married.3 Many of these, of course, do not have children. The needs of this latter group, therefore, are identical with the married, childless group, except that families with both husband and wife working in

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1. Rental Housing: Opportunities for Private Investment, Winnick, p. 217
2. Rental Housing: Opportunities for Private Investment, Winnick, p. 219
3. Commerce, p. 214

the CBD would obviously have a stronger preference for District 1 residence than the married, childless group generally. On the other hand, families with a working wife and children, although now fairly numberous in District 1, are likely to be almost non-existent by 1980, with the exception of the North End and South Cove populations. An important reason is that most of these people will be displaced by urban renewal covering most of the area they now occupy. The second reason is that they are not likely to move back to District 1 either on their own or with public help. First, there are many living areas at almost all price ranges outside of District 1 within ten to twenty minute rapid transit travel-time to the CBD, and with much better environments for child-raising. And second, those in need of public housing should find public housing generally in areas outside the heavily built-up central area. Finally, there are more and more job opportunities for women opening up outside District 1. Consequently, it seems reasonable not to separate this group from other family types: thus, persons without children may have a good reason for District 1 residence but persons with children generally do not.

OCCUPATION GROUPS

Labor and Service Workers with a High Rate of Turnover

A large portion of this group have a strong desire to live in District 1, close to the downtown entertainment center, near bars, and in a cheap rooming house area. Some portion of this group, however, either are young people living at home or are parents with children and would, therefore, prefer living in other areas more suitable for raising families if they could afford it. In any event, most of the entire group, with the exception of North End workers and Chinese South Cove workers, will be displaced by urban renewal. Moreover, in view of the fact that there are other areas (either of a family type or highly urban in character with bars) close to District 1, where these people may live at very low rents, and because of quick M.T.A. access, still work in District 1 (i.e. Central Square, Dudley Center, East Boston, and Charlestown), it would seem that at least no large scale effort need to be made to build back into District 1 living areas for these people. However, some of this group, of course, will remain in inexpensive hotels or in pockets of housing not yet ready for renewal or some will be accommodated by public housing for the elderly. Consequently, no more than a 90% decrease may be expected and probably no less than a 75% decrease by 1980.

Professional and Technical Workers

An estimate for the United States by 1975 is that there will

be a 63% gain in professional employment, as compared to a 36% gain in total employment.1 With renewal, Boston is likely to have an even higher increase in this group than the national average. According to Winnick,the professional and/or better educated person is more likely to be a renter than other people in his income class.2 District 1, if improved, would draw considerable numbers of professional people. Many, of course, would go to numerous outlying rental areas, generally cheaper, and if there are children, considerably more suitable. A cultural center such as Harvard Square draws away many of these people, as do job opportunitied elsewhere, increasing car ownership or improving transportation facilities in the metropolitan area. Furthermore, a large portion of this group are and will continue to be homebuyers. However, another portion are transients with a stay of less than a year and working in the CBD, such that hotel units and apartments without leases (a large portion of which are located in District 1) would continue and probably increase as a sizable District 1 housing demand. In sum, particularly considering the limited number of good living areas in District 1 and lack of modern apartments in 1950 -- with resulting extremely few professional people in the area (see Table 1) -- it would seem that a 200% gain might be expected and at least a gain of 100% in this group.

Students and Artists

College enrollments in New England will double or triple in the next ten years (1960-1970) 3, and consequently, the number of independently-living students might also double or triple. In fact, because District 1 has such a high percentage of small institutions, most of which are further from their optimum expansion point than the larger institutions, it might be reasonable to expect District 1's student population to expand at an even faster rate. Cutting back on this growth would be the fact that Harvard Square, Central Square, and Brookline, already strong competing areas for student residence, would be likely to become even stronger in competition, as urban renewal (particularly in the Back Bay) replaces inexpensive, and/or old and "interesting" apartment or rooming units with new apartment houses or non-residential land uses. The young artist population would also be effected in this way. Good rapid transit connections along with improved roads make residence outside District 1, even for District 1 students, quite feasible. However, certainly not all students would be driven away, for the Back Bay and Beacon Hill, being as unique as they are would continue to be important areas. Consequently, because such extremely large increases in the total student population are expected, it wouldn't be unreasonable to expect a 100% increase in the independently-living

1. Rental Housing: Opportunities for Private Investment, Winnick
2. IBID p. 219-20
3. New England Business Review, April, 1960

student (and artist) population and at minimum a 50% increase. (underlying this estimate is the assumption that institutional dormitory building will continue to house roughly the same percentage of the total student population.)

INCOME GROUPS

Low and High-Middle to High Income Groups

The extremes, low and high, are generally thought of as typical, perhaps suitable, downtown residents. On the one hand are large groups of low income persons crowded into most of the central-city living areas (which have become obsolescent and rundown, and yet useable by landlords who ask high rents and by tenants who can pay these rents by doubling up. And on the other hand are the much fewer numbers of high income groups who seem to be the only ones able to afford the rehabilitated structures in the "good" areas and the very limited amount of new building that takes place. Although in a free economy income must be quite important as a determinant of a person's choice of residence, income has become cripplingly binding in most large cities. A large portion of the low income groups in central cities find the existing crowded slums the only living quarters they can afford. For obvious reasons, the perpetration of the slums is a problem for the metropolitan area as a whole as well as the slum inhabitants. But perhaps almost equally a problem is the decline in size and choice of suitable living areas in the District for middle and high income persons, and with this, not only a decline in the appearance of central cities where many people still spend a large part of their lives, but also a decline in the type of culture which perhaps may only be stimulated by highly urbanized living. Boston obviously is suffering from these problems, as can be seen even by 1950 by the very small number of high income wage earners residing in District 1 (this number should be multiplied by the typical family size which is low) and the very large number of low income wage earners (which also should be multiplied by the typical family size which is higher). Together, these figures if multiplied by almost any figure above "1" would equal almost all of District 1's total population. With the assumption of large-scale urban renewal which will displace many of the low income persons presently predominating the living areas in District 1, it is hoped (and assumed in this study) that, with some government assistance, the resulting population will be a more logical selection of population types, all with real needs or preferences for District 1 residence other than income alone. Table 2 indicates that income is not singled out in this study as a reason

for District 1 residence in 1980.

Table 3 attempts to eliminate the overlap in groups apparent in Tables 1 and 2 and to produce an estimate of the size and composition of the population desiring District 1 residence in 1980. The North End and Chinatown populations are separated from the rest of the population mainly because their composition with regard to age and family type would be likely to be quite different from the rest of the population and also because each of these population groupings should be analyzed further to determine even whether these groups really should, in the long run, be encouraged as nationality living areas and if so what is to be the more exact composition of their population and resulting housing needs. It is assumed for the rest of the population, as had been said before, that nearly all persons with children would not locate in District 1. Occupation groups were not distributed throughout these groups in Table 3, as it was felt that a good deal more study would be needed to do this. The total high and lowpopulation estimates seem reasonable. For the total low estimate is slightly over the Research Division's projections based on past trends and the high estimate, just slightly higher than the 1950 population, reflects a much more optimistic view as to future potential for urban living. Both of theseestimates, however, are somewhat optimistic in nature in that they both assume a great deal of urban renewal in the near future and, with this, drastic changes in the composition of District 1's population. These changes are reflected in the percentages on Table 3.

Table 4, closely drawn from Table 3, presents some possible conclusions as to the quantity of living units needed for the 1980 population wishing District 1 residence. The assumptions underlying these estimates are stated on the Table. If, for example, it were assumed that more or fewer people were to double up than Table 4 is assuming or that "3.5" is not a good estimate of the average persons per living unit in the population groups with children, the estimates for the number of living units needed would, of course, be altered. As for type of structure and type and size of living units needed in 1980, more study should be done to link housing characteristics with the population types presented in this study and their rent paying ability.

However, even without further study, a few general statements can be made about the desirable physical characteristics of District 1's residential areas.

Physical Characteristics of Proposed Residential Areas

It is assumed that persons will be attracted to future intown residential areas in order to be near core functions or institutions, with walk to work/shop/play opportunities (or convenient M.T.A. access) with those areas possess beyond any others in the entire metropolitan region. Therefore it seems reasonable and proper that they be (a) within the persons-oriented sector, (b) so placed that pedestrian movement from them to the core area and the institutions is possible without having to traverse goods-oriented districts, or (c) so that they are not penetrated by goods movement channels, (d) so linked among themselves and with other core functions that M.T.A. access to distant parts of the District is quick and efficient, (e) so located and designed that surface radial traffic movements leading to the core and other foci will not penetrate them, and (f) of such size and form tha t their inhabitants will be able to visualize them easily, traverse them quickly, and have a feeling of personal identification and pride toward them.

Many interesting innovations in the design and site planning of apartment houses are suggested by this central high-density location and by the fact that urban renewal will make fairly large-scale developments possible. These might include (a) clusters of elevator apartments mixed with groups of two and three story walkup row or garden apartments to give lively contrast; (b) the super-block development with its own interior green space, parking, and local shopping; (c) clusters of old rehabilitated row house structures on opposite frontages of a street that has been dead-ended; (d) new row apartments of 3 to 6 stories, some featuring maisonnettes and entrances from various levels, and individual enclosed yard space.

Residential parking might be solved in various ways: (a) one huge underground parking garage covering an entire super block (as with Prudential), (b) built-in basement parking (as with 330 Beacon Street); (c) built-in ground floor parking, partially covered by decks to provide access to buildings and open space; (d) parking courts grouped between rows of apartments and; (e) central parking cores to apartment structures, in which the living units surround the internal multi-storied garage. General parking will be in structures and centralized to gain flexibility and economy of scale, and to realease space (either at grade or on roofs) for amenity.

Central city housing would, for the most part, be organized into a number of compact residential districts, each having its own local shopping, public facilities, institutions for social advancement,

and open space. Present Beacon Hill (with a 1950 population of 13,000 in 90 gross acreage) might be an optimum guide for capacity and geographic size of these future communities, although their dimensions would vary considerably.

Few general prescriptions can be given for the physical form that these districts should assume -- the street pattern and block shapes, and even less the building types. These are matters of design and of most expeditiously re-moulding past forms to accommodate the future. Generally the formula should be variety, contrast, urban character (even an element of urban confusion, but with the worst nuisances removed), a deliberate effort not to rebuild all areas in the same image, and avoidance of the recreation of "suburbia" in the city.

TABLE #1

1950 Population Types Possible Interested in District #1 Residence

	District 1*		City of Boston		Bos.Met.Area	
	#/Prs thous.	%/TO	#/Prs thous.	%/TO	#/Prs thous.	%/TO
MINORITY GROUPS						
For'gn Bn Whts (Ital wish to cluster N.E. only	5.1	3.8	25.3	3.2	67.9	2.9
2nd & 3rd gen'tion (Ital's wish to cluster)	12.1 1/3 for Bos	8.7	10.0 1/3 Bn.	.8	20.0 1/3Bn.	.8
Non-white Negros	3.8	2.9	40.1	5.0	51.3	2.2
Non-white, Other (chinese)	1.4 (3 cove only)	1.0	2.7	.3	4.1	.2
AGE GROUPS						
Yng Prsons 16-19	30.4	20.0	44.6	5.6	119.2	5.0
20-29	6.8	4.9	136.9	17.1	413.3	17.5
Mdl Aged 50-64	28.3	20.6	126.3	15.8	387.0	16.4
Eld'ly 65 & over	19.1	13.9	77.6	9.7	231.8	9.8
** FAMILY TYPE						
Single	69.6	55.0	209.2	33.0	547.7	29.8
Mrd wthout chldrn 4/5-5/6 2 prs hhds.	12.0	9.4	47.0	7.4	135.9	7.4
Mrd, 1 or 2 yng child .8 no child undr 5 yrs	7.1	5.6	27.6	4.3	178.9	9.6
Fam, wk'ng wife 2/3 working women	20.9	16.5	77.9	12.3	210.9	11.5
OCCUPATION GROUPS						
Lbr & Ser Wkers	16.7	13.2	57.8	9.1	140.2	7.6
Prof & Tech Wkrs	9.1	7.2	32.5	5.2	112.4	6.1
Stdnts & Artists 1/10 pers 16-29	4.0	3.2	----	---	-----	---
INCOME GROUPS						
Low (undr 2,000)	49.5	39.0	95.3	15.1	511.7	27.9
Hgh/mid-high (10,000 & over)	29	2.3	5.1	.8	21.7	1.2

continued over

TABLE #1 continued

*District #1 figures don't go all the way to Inner Belt but do overlap Massachusetts Avenue.

** Below double horizontal line, percentages are computed on number of persons 14 years and over.

Total Popualtion	# Persons, thousands
District #1	138.1
Boston City	801.4
Met. Boston	2,365.5
14 years and over	
District #1	126.8
Boston City	663.2
Met. Boston	1,841.9

Source: 1950 Census

TABLE #2

Estimates of Change in District #1 Housing Demand
By Certain Population Types

	1950	1980 High	1980 Low
For Bn. Wht. (italians)	5.1)	17.1 No Change	10.0 40% decrease
2nd & 3rd gen'tion (italians)	12.0)		
Non-Wht. Negroes	3.8	*No longer to be considered apart from rest of Pop in Dist 1	*Same as "high"
Non-Wht, Cther (chinese)	1.4	1.7 20% increase	1.4 No change
Yng Persons 16-29	37.2	68.1 75% increase	37.2 No change
Mdl Aged 50-64	28.3	34.0 20% increase	24.1 15% decrease
Elderly 65 & over	19.1	28.6 50% increase	18.3 No change
Single	69.6	112.0 60% increase	69.6 No change
Mrd., wthout child	12.0	25.2 110% increase	15.0 25% increase
Mrd., 1or2 yng chld	7.1	1.8 75% increase?	.8 90% decrease
Fam, wking wife	20.9	** not to be separated from other fam. groups	** Same as "High"
Lbr & Ser Workers	16.7	4.2 75% decrease	1.9 90% decrease
Prof & Tech	9.1	27.3 20% increase	18.2 100% increase
Stu. & Artists	4.0	8.0 100% increase	6.0 50% increase
Low Income	49.5	Income (of itself) eliminated as a reason	*** -)Same as "high
High/mid-High	2.9	-For Dist 1 residence ***	-)

continued over

Table #2 Continued

* Urban Renewal will displace most of those persons presently living in negro ghettos in District #1

** (1) Families with working wives without children needn't be considered apart from "Married Children" group.

(2) On the other hand, most families with working wives with children will live outside District #1, after Urban Renewal

*** Urban Renewal will displace most of the Low Income persons living in District #1, Public Housing should be built to accommodate these people outside District #1 unless there are good reasons for District #1 residence other than income (i.e., the needs of certain elderly groups would be an example of a good reason).

TABLE #3

Estimates of District #1 Housing Demand in 1980 Compared with 1950 Population

	1950 Population		1980 Housing Demand			
			High		Low	
	# Prs thous.	%/TO	# Prs thous.	%/TO	# Prs thous.	%/TO
No. End Italians	17.1	12	17.1	11	10.0	11
Chinatown Population	1.4	1	1.7	1	1.4	2
Yng Persons 16-29 liv.ind.	19.8	14	61.6	40	27.0	30
Single	(18.0	13)	(49.3	32)	(21.6	24)
Mrd.,Childless	(1.8	1)	(12.3	8)	(5.4	6)
Yng-Mid-age/range 30-49	9.5	7	13.0	8	6.0	7
Single	(8.0	6)	(10.9	6)	(5.1	6)
Mrd.Childless	(1.5	1)	(2.1	2)	(1.0	1)
Middle-Aged 50-64	23.1	17	28.5	19	24.1	27
Single	(21.0	15)	(22.8	15)	(19.3	22)
Mrd.Childless	(2.1	2)	(5.7	4)	(4.8	5)
Elderly 65 & over	17.0	12	24.6	16	18.3	20
Single	(21.0	15)	(22.8	15)	(19.3	22)
Mrd.Childless	(2.1	2)	(5.7	4)	(4.8	5)
Elderly 65 & over	17.0	12	24.6	16	18.3	20
Single	(16.0	11)	(20.5	13)	(15.2	16)
Mrd.,Childless	(1.0	1)	(4.1	3)	(3.1	4)
Persons with children (children included in fig)	50.1	37	6.7	5	2.3	3
TOTALS	138.0	100%	153.2	100%	89.1	100%

continued over

Table #3 continued

(After N.E. & Chinatown subtracted)*
Steps for deriving figures

1. Single & Married Childless totals* divided among the age groups by the portion each age group has of the total 1950 population 14 years and over*

2. Single & Married Childless sub-totals then added to form age group sub-totals and totals

3. The resulting age group totals then modified to conform more closely to census totals* in the following way:

   a. Single sub-totals raised for middle aged & elderly groups

   b. Single sub-totals lowered for young & young-middle aged groups

   c. Married childless sub-total lowered for young-middle aged group

   d. Married childless sub-total raised for middle-aged group

* See Table #2 for figures

Source: 1950 Census

TABLE #4

Estimate of Living Units Needed in 1980
(Based on Projected Population - Table #3)

	HIGH		LOW		Prs/Liv/Unt
	#/unts	%/TO	#/Unt	%/TO	
North End Italians	4,860	5	2,850	5	3.5
Chinatown Population	490	1	400	1	3.5
Yng Persons 16-19 (liv. independent)	34,200	37	15,000	27	1.8
Single (3/4 double up)	27,350	30	12,000	21	1.75
Married, childless 4/1 ratio	6,850	7	3,000	6	2.00
Yng-mid-age range 30-49	10,000	11	4,630	8	1.3
Single (1/4 double up)	8,330	9	3,860	7	1.25
Mrd Childless 5/1 ratio	1,670	2	770	1	2.00
Mid-Aged 50-64	20,400	22	17,200	32	1.4
Single (1/4 double up)	16,320	18	13,480	26	1.25
Mrd, childless 4/1 ratio	4,080	4	3,720	6	2.00
Elderly 65 & over	18,900	21	14,100	26	1.3
Single (1/4 double up)	15,750	17	11,750	22	1.25
Mrd, childless 5/1 ratio	3,150	4	2,350	4	2.00
Persons with children (children incld in fig.)	1,940	3	670	1	3.5
TOTALS	90,790	100%	54,850	100%	

c.f. 1950

Dwelling Units	- 39,538
Non-housekeeping units (those accounted for in Pollard's figures)	- 22,043
Other Non-housekeeping units (estimate probably high)	- 12,000
	73,581

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